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EXAMINER	
FRAZIER, BARBARA S	
ART UNIT	PAPER NUMBER
1611	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/535,084	HARDER ET AL.	
	Examiner	Art Unit	
	BARBARA FRAZIER	1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-23* is/are pending in the application.

4a) Of the above claim(s) *1-3,8,10,11,16-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,7,9 and 12-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/5/09 has been entered.

Status of Claims

2. Claims 1-4 and 7-23 are pending in this application. Claims 5, 6, 24, and 25 stand canceled.

3. Claims 1-3 and 19-23 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/22/08.

4. Claims 8, 10, 11, and 16-18 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/22/08.

5. Claims 4, 7, 9, and 12-15 are examined.

Double Patenting

6. **Claims 4, 7, 9, 12-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 and 21-24 of copending Application No. 10/706,717.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same subject matter and composition components.

The claimed invention is drawn to a pharmaceutical formulation comprising yttrium (Y), neodymium (Nd), or zirconium, adapted to be implanted in a vascular vessel and adapted to inhibit the proliferation of human smooth muscle cells of the vascular vessel wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel and the formulation includes an at least very substantially biodegradable carrier (see claim 4).

The '717 application is drawn to an endoprosthesis comprising a carrier structure comprising a metallic material, which comprises a magnesium alloy of the following composition:

Magnesium:	>90%
Yttrium:	3.7% - 5.5%
Rare earths:	1.5% - 4.4% and
Balance:	<1%,

The "rare earths" may comprise neodymium (claim 4) and the "balance" may comprise zirconium (claim 5).

The '717 application differs from the claimed invention because it is named as an endoprosthesis, and because it does not recite the limitations of "pharmaceutical

formulation" and "inhibiting the proliferation of human smooth muscle cells wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel".

However, the limitations in the claimed invention of are intended use and do not lend patentable weight to the composition as claimed. Furthermore, the intended use of the '717 application as "endoprosthesis" does not lend patentable weight to the composition as claimed. Therefore, the composition of the claimed invention and the '717 application are drawn to the same subject matter and composition components.

With respect to the dependent limitations of amounts of metals present, the '717 application teaches ranges which are encompassed by, or comparable to, the ranges taught in the claimed invention, and one skilled in the art would select optimal amounts of metals as a matter of routine experimentation.

With respect to the yttrium concentration in the region of the human smooth muscle cells to be treated (claim 15), the '717 application would be capable of adapting to provide such a concentration, especially given the fact that the amount of yttrium taught in the '717 application is encompassed by the amount of yttrium taught in the claimed invention. The limitation is one of intended use, and does not lend patentable weight to the composition as claimed.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

7. **Claims 4, 7, 9, and 12-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 5, 7-9, and 16-19 of copending Application No. 10/596,797.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same subject matter and composition components.

The claimed invention is recited above (see paragraph 7).

The '797 application is drawn to a radiopaque marker for medical implants comprising 10 to 90 wt.% of a biodegradable base component, 10 to 90 wt.% of one or more radiopaque elements including Y and Nd, less than or equal to 10 wt.% residual components, the components cited adding up to 100 weight-percent. The biodegradable base component may be a magnesium alloy (claim 3). The definition of "residual components" in the '797 application includes Zr, and the definition of "magnesium alloy" includes WE43 (see paragraph 27, page 8).

The '797 application differs from the claimed invention because it recites the limitation of "radiopaque marker for medical implants", and it does not recite the limitations of "pharmaceutical formulation" and "inhibiting the proliferation of human smooth muscle cells wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel".

However, the limitations in the claimed invention are intended use and do not lend patentable weight to the composition as claimed. Furthermore, the intended use of the '797 application as "radiopaque marker for medical implants" does not lend patentable weight to the composition as claimed. Therefore, the composition of the

claimed invention and the '797 application are drawn to the same subject matter and composition components.

With respect to the dependent limitations of amounts of metals present, the '797 application teaches ranges which are comparable to the ranges taught in the claimed invention, and one skilled in the art would select optimal amounts of metals as a matter of routine experimentation.

With respect to the yttrium concentration in the region of the human smooth muscle cells to be treated (claim 15), the radiopaque marker of the '797 application would be capable of adapting to provide such a concentration, especially given the fact that the amount of yttrium taught in the '797 application is comparable to the amount of yttrium taught in the claimed invention. The limitation is one of intended use, and does not lend patentable weight to the composition as claimed.

8. **Claims 4, 7, 9, and 12-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 and 11 of copending Application No. 10/908,729.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same subject matter and composition components.

The claimed invention is recited above (see paragraph 7).

The '729 application is drawn to an implant for vessel ligature comprising an alloy which is at least partially biodegradable and which comprises:

greater than 87% magnesium;

from about 3% to about 6% yttrium;

from about 1% to about 5% lanthanide; and

a balance of about 0.0% to about 2%.

The "lanthanide" further comprises neodymium (claims 4 and 5), and the "balance" further comprises zirconium (claims 7-9 and 11).

The '729 application differs from the claimed invention because it recites the limitation of "implant for vessel ligature", and it does not recite the limitations of "pharmaceutical formulation" and "inhibiting the proliferation of human smooth muscle cells wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel".

However, the limitations in the claimed invention are intended use and do not lend patentable weight to the composition as claimed. Furthermore, the intended use of the '797 application as "implant for vessel ligature" does not lend patentable weight to the composition as claimed. Therefore, the composition of the claimed invention and the '729 application are drawn to the same subject matter and composition components.

With respect to the dependent limitations of amounts of metals present, the '729 application teaches ranges which are encompassed by or comparable to the ranges taught in the claimed invention, and one skilled in the art would select optimal amounts of metals as a matter of routine experimentation.

With respect to the yttrium concentration in the region of the human smooth muscle cells to be treated (claim 15), the implant of the '729 application would be

capable of adapting to provide such a concentration, especially given the fact that the amount of yttrium taught in the '797 application is encompassed by or comparable to the amount of yttrium taught in the claimed invention. The limitation is one of intended use, and does not lend patentable weight to the composition as claimed.

9. **Claims 4, 7, 9, and 12-15 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 11/221,322 and claims 1-4 of copending Application No. 11/221,344.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to the same subject matter and composition components.

The claimed invention is recited above (see paragraph 7).

The '322 application and the '344 application are drawn to an endoprosthesis comprising a magnesium alloy of the following composition:

Magnesium:	between about 60.0 and about 88.0% by weight
Rare earth metals:	between about 2.0 and about 30.0% by weight
Yttrium:	between about 2.0% and about 20.0% by weight
Zirconium:	between about 0.3% and about 5.0% by weight
Balance:	between 0 and about 10.0% by weight

The '322 application also comprises neodymium in claims 3 and 4; the '344 application also comprises neodymium in claim 1.

The '322 application and the '344 application differ from the claimed invention because they recite the limitation of "endoprosthesis comprising a carrier structure", and they do not recite the limitations of "pharmaceutical formulation" and "inhibiting the proliferation of human smooth muscle cells wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel".

However, the limitations in the claimed invention are intended use and do not lend patentable weight to the composition as claimed. Additionally, the presence of a "carrier structure" in the '322 and '344 applications is not excluded from the pharmaceutical formulation of the claimed invention. Furthermore, the intended use of the '322 and '344 applications as "endoprosthesis" does not lend patentable weight to the composition as claimed. Therefore, the composition of the claimed invention and the '322 and '344 applications are drawn to the same subject matter and composition components.

With respect to the dependent limitations of amounts of metals present, the '322 and '344 applications teach ranges which are encompassed by or comparable to the ranges taught in the claimed invention, and one skilled in the art would select optimal amounts of metals as a matter of routine experimentation.

With respect to the yttrium concentration in the region of the human smooth muscle cells to be treated (claim 15), the endoprosthesis of the '322 application and the '344 application would be capable of adapting to provide such a concentration, especially given the fact that the amount of yttrium taught in the '322 and '344 applications is encompassed by or comparable to the amount of yttrium taught in the

claimed invention. The limitation is one of intended use, and does not lend patentable weight to the composition as claimed.

Terminal Disclaimer

10. The terminal disclaimers filed on 1/5/09 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent(s) granted on Application Serial Nos. 10/706,717; 10/596,797; 10/908,729; 11/221,322; and 11/221,344; have been reviewed and are NOT accepted.

11. The terminal disclaimers do not comply with 37 CFR 1.321(b) and/or (c) because:

> The person who has signed the disclaimer has not stated the extent of his/her interest, or the business entity's interest, in the application/patent. See 37 CFR 1.321(b)(3).

12. None of the Terminal Disclaimers filed list the name of the assignee. Describing the assignee as "the disclaimant" is insufficient for listing the assignee and the extent of its interest as required by 37 CFR 1.321 (b)(3).

13. Examples of acceptable language for making the disclaimer of the terminal portion of any patent granted on the subject application follow:

I. If a Provisional Obviousness-Type Double Patenting Rejection Over A Pending Application was made, use:

The owner, _____, of _____ percent interest in the instant application hereby disclaims the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending **reference** Application Number _____, filed on _____, as such term is defined in 35 U.S.C. 154 and 173, and as the term of any patent granted on said **reference** application may be shortened by any

terminal disclaimer filed prior to the grant of any patent on the pending **reference** application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the **reference** application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

II. If an Obviousness-Type Double Patenting Rejection Over A Prior Patent was made, use:

The owner, _____, of _____ percent interest in the instant application hereby disclaims the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **reference patent** No. _____ as the term of said **reference patent** is defined in 35 U.S.C. 154 and 173, and as the term of said **reference patent** is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **reference patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

Alternatively, Form PTO/SB/25 may be used for situation I, and Form PTO/SB/26 may be used for situation II; a copy of each form may be found at the end MPEP § 1490.

Claim Rejections - 35 USC § 112

14. The rejection of claim 14 under 35 U.S.C. 112, first paragraph, is withdrawn in view of Applicant's amendment to claim 14.

Claim Rejections - 35 USC § 102

15. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

16. The rejection of claim 9 under 35 U.S.C. 102(b) as being anticipated by Stroganov et al (US Patent 3,687,135) is withdrawn in view of Applicant's amendment to claim 9.

17. Claims 4, 7, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Stroganov et al (US Patent 3,687,135).

The claimed invention is drawn to a pharmaceutical formulation comprising one or more of the elements from the group yttrium (Y), neodymium (Nd), or zirconium (Zr), adapted to be implanted in a vascular vessel and adapted to inhibit the proliferation of human smooth muscle cells of the vascular vessel wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel and the formulation includes an at least very substantially biodegradable carrier (see claim 4).

In the elected species of the claimed invention, the element is yttrium and the biodegradable carrier is a magnesium alloy.

Stroganov et al. teach a magnesium-base alloy for use in bone surgery which contains the following components, wt. % (see abstract):

Rare earth metal	0.40–4.0
Cadmium	0.05–1.2
Calcium or aluminum	0.05–1.0
Manganese	0.05–1.0
Silver	0–0.8
Zirconium	0–0.8
Silicon	0–0.3
Magnesium	remainder

Stroganov et al. further teach that neodymium and yttrium are predominantly employed as the rare earth metal (col. 2, lines 29-31). A magnesium alloy comprising yttrium at 1.6 wt.% is exemplified (see Example 3). The limitations in the claim of

"adapted to be implanted in a vascular vessel and adapted to inhibit the proliferation of human smooth muscle cells of the vascular vessel" are not given patentable weight, since the composition of Stroganov et al. has pharmaceutical use in bone surgery, and thus would be capable of the intended use of the claimed invention. Therefore, the composition of Stroganov et al. anticipates the composition of the claimed invention.

With respect to the yttrium concentration in the region of the human smooth muscle cells to be treated (claim 15), the composition of Stroganov et al. would be capable of adapting to provide such a concentration, especially given the fact that the amount of yttrium taught by Stroganov et al. is encompassed by the amount of yttrium taught in the claimed invention. The limitation is one of intended use, and does not lend patentable weight to the composition as claimed.

Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation; "adapted for" clauses are an example of such language (see MPEP 2106 II). Since the invention of Stroganov et al. and the invention as claimed are the same, the invention of Stroganov et al. would be capable of performing the intended use of providing an yttrium concentration in the region of the human smooth muscle cells to be treated of between 200 uM and 2 mM, in particular between 800 uM and 1 mM, as taught by claim 15.

Response to Arguments

18. Applicant's arguments filed 1/5/09 have been fully considered but they are not persuasive.

Applicants argue that it is improper to consider the "adapted for" clauses to be *de facto* non-limiting, and that the limitation "adapted to be implanted in a vascular vessel" provides a structural limitation, such as use as a stent, for example.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the formulation is adapted for use as a stent) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As argued previously, the formulation of Stroganov would be capable of the intended use, since the components and amounts of the formulation of Stroganov are the same as that of the claimed invention, and Applicants have not provided any objective evidence that the formulation of Stroganov would not be capable of the intended use recited in the claims. Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999). However, in the instant case, such an explicit definition is not provided for the phrase "adapted to be implanted in a vascular vessel" in the specification; therefore, the phrase is given its broadest reasonable

interpretation, which includes the formulation as currently claimed and taught in Stroganov et al.

In further response to Applicant's argument that the composition of Stroganov et al would not be adapted to be implanted in a vascular vessel, the Examiner cites Heublein et al (US 2002/0004060), which teaches magnesium-based alloys used as medical implants, which further contain metal(s) such as zirconium and/or rare earth metals, may be used as implants for a vascular vessel, as well as a fastening or supporting device for temporarily fixing tissue parts, such as orthopaedic implants in the form of nails or screws (see paragraphs 13-21, 23, 24, and 27). Therefore, one skilled in the art would recognize that the composition of Stroganov et al (i.e., a magnesium-based alloy further comprising zirconium and rare earth metals) would be capable of being adapted to be implanted in a vascular vessel, absent evidence to the contrary.

Applicants also argue that the limitation "wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel" provide limitations on the structure in that the formulation must degrade within the vessel. Applicants argue that such behavior is caused by an at least substantially biodegradable carrier being present. Applicants further argue that the fact that Stroganov's composition is biodegradable does not demonstrate that it would be capable of performing the same intended use as recited in the claims, i.e., adapted for intravascular liberation.

This argument is not persuasive because, as stated previously, the Stroganov reference discloses the same biodegradable carrier (e.g., see Example 3) as that disclosed in the claimed invention (e.g., claim 7) and therefore would be capable of

performing the intended used recited in the claims, and Applicants have not provided any objective evidence that the formulation of Stroganov would not be capable of the intended use recited in the claims.

Regarding claim 15, Applicants argue that Stroganov does not teach or suggest the delivery of the specified amounts of yttrium to smooth muscle cells, and therefore dose not teach or suggest the delivery of the specified amounts of yttrium to smooth muscle cells as recited in claim 15.

This argument is not persuasive. Claim 15 is not a method claim with positive method steps, but a composition claim. The "adapted for" language of claim 15 does not impart any structural limitation to the claim, nor does it limit the scope of the claim. Since the invention of Stroganov et al. and the invention as claimed are the same, the invention of Stroganov et al. would be capable of performing the intended use of providing an yttrium concentration in the region of the human smooth muscle cells to be treated of between 200 uM and 2 mM, in particular between 800 uM and 1 mM, as taught by claim 15.

Claim Rejections - 35 USC § 103

19. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

20. Claims 9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stroganov et al (US Patent 3,687,135).

The claimed invention and the invention of Stroganov et al. are recited above (see paragraph 17).

With respect to claims 9 and 12-14, Stroganov et al do not exemplify a formulation comprising a magnesium alloy and containing Y, rare earths without Y, and remaining elements, or containing, Y, Nd, and Zr, in the weight percentages specified by claims 9 and 12-14.

However, Stroganov et al do teach that the rare earth metals (i.e., Y plus rare earths without Y, or Y and Nd) are in the range of 0.4 – 4.0 wt.%. Additionally, Stroganov et al teach that zirconium may be present in amount ranging from 0 – 0.8 wt.%, and the total remaining elements may be present in amounts ranging from 0.15 – 5.1 wt.% (col. 2, lines 20-28). These ranges overlap or are substantially similar those of the claimed invention (note that the amount of yttrium of "4.1%" in claim 14 is substantially similar to "4.0%" in Stroganov et al), and one skilled in the art would be motivated to select optimal amounts of the elements from within said ranges by routine experimentation in order to control the rate of absorption of the magnesium alloy carrier (for example, see col. 1, lines 58-60). Stroganov et al also teach that neodymium and yttrium are predominantly employed as the rare earth metal (col. 2, lines 29-31).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to form a pharmaceutical formulation having the elements and amounts as specified by the claimed invention with a reasonable expectation of success.

It is prima facie obvious to combine two compositions, each of which is taught by the prior art, to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. See MPEP 2144.06. One skilled in the art would have been motivated to combine the compositions comprising yttrium and neodymium as the rare earth metal, since alloys, by their nature, are known to have improved properties with a combination of elements, with a reasonable expectation of success. Additionally, one skilled in the art would have been motivated to select zirconium to be present in the formulation, since zirconium is already exemplified in the formulations of Stroganov et al.

Response to Arguments

21. Applicant's arguments filed 1/5/09 have been fully considered but they are not persuasive.

Applicants argue that Stroganov teaches away from use of the recited compositions adapted as a vascular vessel implant by providing a composition that stimulates cell growth instead of inhibiting it. Applicants further argue that there is no suggestion or motivation for one of skill in the art to modify a bone-growth stimulating composition and to adapt it for use in blood vessels to inhibit smooth muscle proliferation, asserting that one of ordinary skill in the art would understand that the general suitability of a composition with regard to treatment of bone would not be predictive of suitability of that same composition with regard to blood vessels.

This argument is not persuasive because, as stated previously, the invention of Stroganov et al. and the invention as claimed are the same; therefore, the invention of

Stroganov et al would be capable of performing the intended uses recited in the "adapted for" clauses of the claimed invention, absent evidence to the contrary. Stroganov teaches that its compositions can be used to stimulate bone growth, but it does not exclude its compositions from being used for the inhibition of proliferation of smooth muscle cells, and Applicants have not presented objective evidence that the compositions of Stroganov would not be capable of the intended uses recited in the claimed invention. Applicant's assertions that "one of ordinary skill in the art would understand the general suitability" of each of the intended uses does not amount to objective evidence.

Applicants also argue that Stroganov clearly provides an upper limit of total rare earth metals of 4.0% by weight (col. 2, line 21), while the claimed invention provides a total rare earth weight percentage of 5.2%, 5.5%, or 6.3% (claims 12, 13, and 14, respectively). Applicants also argue that the amount of yttrium in claim 14 has been amended to provide "Yttrium in an amount of 4.1% by weight, and therefore, cannot be said to overlap the range of rare earth metals (which includes yttrium) of Stroganov.

This argument is not persuasive because it would still be prima facie obvious to person having ordinary skill in the art to combine the compositions comprising yttrium and neodymium disclosed by Stroganov for the same purpose disclosed by Stroganov, since both compositions would be useful for the same purpose disclosed by Stroganov (noting that the composition thus formed still anticipates or renders obvious the claimed invention, for reasons stated above), and such a combination would reasonably be expected to improve the control of adsorption of the magnesium alloy carrier (see col. 1,

lines 58-60). The combination of compositions comprising yttrium and neodymium is not limited to the weight range specified in Stroganov, since the weight ranges specified in Stroganov are limited to the individual compositions, not the combined compositions.

Applicants finally argue that the lapse of 30 years between the issue date of Stroganov (29 August 1972) and the priority date of the present invention (13 November 2002), additionally demonstrates that the modification of Stroganov as suggested by the Examiner was not obvious to one of ordinary skill in the art at the time of the invention, despite well-publicized efforts to improve therapy for heart disease during this time period.

In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977). Applicant's assertions that there was no modification in the art, despite well-publicized efforts to improve therapy, amount to arguments only and do not constitute a showing that the art tried and failed to solve the problem.

The following is a new rejection with this Office Action:

22. Claims 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heublein et al (US 2002/0004060).

The claimed invention is drawn to a pharmaceutical formulation comprising one or more of the elements from the group yttrium (Y), neodymium (Nd), or zirconium (Zr),

adapted to be implanted in a vascular vessel and adapted to inhibit the proliferation of human smooth muscle cells of the vascular vessel wherein the formulation is adapted for intravascular liberation after implantation in a vascular vessel and the formulation includes an at least very substantially biodegradable carrier (see claim 4). Claim 7 is drawn to the a formulation as set forth in claim 4, wherein the carrier is an alloy, selected from the group consisting of magnesium, iron and tungsten alloys.

Heublein et al disclose a medical implant made of a metallic material (abstract), wherein the medical implant may be adapted for a vascular vessel, such as a stent (paragraphs 6 and 10). Vessel supports are able to overcome problems of a permanent implant, including in-stent stenosis (paragraphs 31 and 7), and therefore are adapted to inhibit the proliferation of human smooth muscle cells of the vascular vessel. The implants are made of biodegradable material having at the same time advantageous mechanical properties (paragraph 11), and therefore are adapted for intravascular liberation after implantation in a vascular vessel. Heublein et al further disclose that magnesium is preferred as the main constituent (paragraphs 13, 15, and 37) with a subsidiary constituent such as zirconium (paragraph 14), and advantageous decomposition times have furthermore been afforded by materials with magnesium as main constituent and 1-4% rare earths, in particular neodymium (paragraphs 15 and 17).

Heublein et al do not specifically exemplify the combination of zirconium or neodymium with a magnesium carrier.

However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select zirconium or neodymium with the magnesium carrier; thus arriving at the claimed invention. One skilled in the art would have been motivated to do so, with a reasonable expectation of success, because Heublein et al fairly teach and suggest the use of zirconium or neodymium as the subsidiary constituent, and magnesium as the main constituent. Thus, it would be within the purview of the skilled artisan to select either zirconium or neodymium with the magnesium carrier by routine experimentation, in order to optimize properties of the resultant formulation, such as stability and controlled degradation.

The following is a new rejection with this Office Action:

23. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heublein et al as applied to claims 4 and 7 above, and further in view of *The Columbia Electronic Encyclopedia*, 6th ed., 2007.

Claim 9 of the claimed invention is drawn to a formulation as set forth in claim 4, wherein the formulation contains Y in a quantitative proportion of between 3.7 and 5.5% by weight with respect to the total weight of the formulation (claim 9).

The invention of Heublein et al is delineated above (see paragraph 22). Heublein et al further teach that the formulation may contain 0- 5% rare earths (paragraphs 16 and 21).

Heublein et al do not teach that the rare earths may be yttrium.

However, one skilled in the art would reasonably envisage the use of yttrium from the disclosure of "rare earths" in Heublein et al. As evidence, *The Columbia Electronic Encyclopedia*, 6th ed., defines "rare earths" as a group of metals including yttrium (see citation at http://www.infoplease.com/ce6/sci/A0841162.html). Therefore, it would be within the purview of the skilled artisan to select yttrium as the rare earth in the formulation of Heublein et al by routine experimentation, in order to optimize the properties of the resultant formulation, including efficacy, stability, and rate of degradation. Regarding the amount of yttrium, the amount range taught by Heublein et al overlaps that of the claimed invention; one skilled in the art would be motivated to manipulate the amount of yttrium from within said ranges by routine experimentation, in order to optimize the properties of the resultant formulation, including efficacy, stability, and rate of degradation.

Regarding claim 15, one skilled in the art would reasonably expect the formulation taught by Heublein et al to provide an yttrium concentration in the region of the human smooth muscle cells to be treated of between 200uM and 2 mM, as recited in the claimed invention, since the components and amounts taught in the formulation of Heublein et al are the same as those of the claimed invention.

Conclusion

No claims are allowed at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA FRAZIER whose telephone number is (571)270-3496. The examiner can normally be reached on Monday-Thursday 9am-4pm EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Landau can be reached on (571)272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BSF
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